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In The Claims:

1. (Currently Amended) A microfluidic device for displaying indicia in response to a change in a predetermined parameter of a fluid-flowing therethrough, comprising: a body defining a channel for accommodating the flow of the fluid therethrough; and a monitor structure retained [disposed] in the channel of the body at a user desired position within [in] the flow of fluid, the monitor structure displaying a first indicia in response to the predetermined parameter of the fluid having a first value and a second indicia in response to the predetermined parameter of the fluid having a second value[.];

wherein the first and second indicias are independent of size.

- 2. (Original) The microfluidic device of claim 1 wherein the monitor structure includes a polymerized mixture, the polymerized mixture including an immobilized dye being a first color in response to the predetermined parameter of the fluid having the first value and being a second color in response to the predetermined parameter of the fluid having the second value.
- 3. (Original) The microfluidic device of claim 2 wherein the first indicia is provided by the dye being the first color and the second indicia is provided by the dye being the second color.
 - 4. (Original) The microfluidic device of claim 2 wherein the dye is phenolphthalein.
 - 5. (Original) The microfluidic device of claim 2 wherein the dye is congo red.
- 6. (Original) The microfluidic device of claim 2 wherein the mixture includes a hydrogrel, a photo-initiator, and a cross-linker.

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7. (Original) The microfluidic device of claim 1 wherein the monitor structure includes a polymerized mixture, the polymerized mixture having a first dimension in response to the predetermined parameter of the fluid having the first value and of a second dimension in response to the predetermined parameter of the fluid having the second value.

Claim 8 (Cancelled)

- 9. (Original) The microfluidic device of claim 1 further comprising a second monitor structure disposed in the channel of the body in the flow of fluid, the second monitoring structure providing a first indicia in response to a second predetermined parameter of the fluid having a second indicia in response to the second predetermined parameter of the fluid having a second value.
- 10. (Currently Amended) A method for monitoring the environment within a microfluidic device, comprising the steps of:

immobilizing [providing] a monitor structure in a channel of the microfluidic device; and passing fluid over the monitor structure in the channel;

whereby the monitor structure generates a visual display independent of size in response to exposure to a parameter of the fluid having a predetermined value.

11. (Original) The method of claim 10 wherein the step of providing the monitor structure includes the additional step of immobilizing a dye in a polymer matrix.

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12. (Original)The method of claim 11 wherein the step of immobilizing the dye includes the additional steps:

mixing the dye in a pre-polymer mixture and providing the same as a pregel; injecting the pregel in the channel of the microfluidic device; and polymerizing the pregel in the channel to form the monitor structure.

- 13. (Original) The method of claim 12 comprising the additional step of cleaning the channel of the microfluidic device after polymerizing the pregel.
- 14. (Original) The method of claim 12 wherein the pre-polymer mixture includes a hydrogel, a photo-initiator and a cross-linker.
- 15. (Original) The method of claim 12 wherein the pre-polymer mixture includes 2-hydroxy ethyl methacrylate (HEMA), acrylic acid (AA), ethylene glycol dimethacrylate (EGDMA), and 2,2-dimethoxy-2-phenylacetophenone (DMPA).
 - 15. (Original) The method of claim 11 wherein the dye is phenolphthalein.
 - 16. (Original) The method of claim 11 wherein the dye is congo red.
 - 17. (Original) The method of claim 10 comprising the additional steps of: providing a second monitor structure in the channel of the microfluidic device; and passing fluid over the second monitor structure in the channel;

whereby the second monitor structure generates a visual display in response to exposure to a second parameter of the fluid having a predetermined value.

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18. (Original) A method for monitoring the environment within a microfluidic device, comprising the steps of:

mixing a dye in a pre-polymer mixture and providing the same as a pregel; injecting the pregel into a channel of the microfluidic device; polymerizing the pregel in the channel to form a monitor structure; and passing fluid over the monitor structure in the channel such that the dye changes color in response to a parameter of the fluid having a predetermined value.

- 19. (Original) The method of claim 18 wherein the step of polymerizing the pregel includes the step of immobilizing the dye in the polymerized pre-polymer mixture.
- 20. (Original) The method of claim 18 wherein the monitor structure changes dimension in response to a predetermined value of a second parameter of the fluid.
- 21. (Original) The method of claim 18 comprising the additional step of cleaning the channel of the microfluidic device after polymerizing the pregel.
- 22. (Original) The method of claim 18 wherein the pre-polymer mixture includes a hydrogel, a photo-initiator and a cross-linker.
- 23. (Original) The method of claim 18 wherein the pre-polymer mixture includes 2-hydroxy ethyl methacrylate (HEMA), acrylic acid (AA), ethylene glycol dimethacrylate (EGDMA), and 2,2-dimethoxy-2-phenylacetophenone (DMPA).
 - 24. (Original) The method of claim 18 wherein the dye is phenolphthalein.
 - 25. (Original) The method of claim 18 wherein the dye is congo red.

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26. (Original) The method of claim 18 further comprising the additional step of passing fluid over a second monitor structure provided in the channel such that the second monitor structure changes color in response to a second parameter of the fluid having a predetermined value.

27. (Original) The method of claim 26 comprising the additional steps of:
mixing a second dye in a second pre-polymer mixture and providing the same as a second
pregel;

injecting the second pregel into the channel of the microfluidic device; and polymerizing the second pregel in the channel to form the second monitor structure.